## CLAIMS

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1. An optical device for aiming along an axis Z and visually indicating a reading zone, comprising at least an illuminating assembly (2a,2b) active on a reading zone portion along an optical emission path (100a,100b), characterized in that said at least one illuminating assembly (2a,2b) comprises:
   - a light source (3);
   - a diaphragm (4) having a preset shape for selecting a portion of the light generated by said source (3);
   - a converging lens (5) placed downstream of the diaphragm (4) for collimating the shaped light coming from the diaphragm (4) and projecting it onto the reading zone portion.

2. A device according to Claim 1, wherein the converging lens ~~(5)~~ is positioned at a suitable distance away from the diaphragm ~~(4)~~ such that the shaped light coming from the diaphragm ~~(4)~~ is focused ~~onto~~ the reading zone portion.

3. A device according to Claim 1, comprising at least two first illuminating assemblies ~~(2a)~~ disposed symmetrically relative to the aiming axis Z such that their respective optical emission paths ~~(100a)~~ identify a linear portion on the reading zone.

4. A device according to Claim 3, comprising at least two second illuminating assemblies ~~(2b)~~ disposed symmetrically relative to the aiming axis Z such that their respective optical emission paths ~~(100b)~~ identify, jointly with the optical paths ~~(100a)~~ of the first illuminating assemblies ~~(2a)~~, a quadrangular portion on the reading zone.

5. A device according to Claim 1, wherein the light source ~~(3)~~ generates an inclined optical beam with respect to a first and a second reference plane XZ, YZ lying perpendicular to and intersecting each other along the aiming axis Z.

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6. A device according to Claims 3 and 5, wherein the optical paths (100a) of the first illuminating assemblies (2a) are set, relative to the axis Z, at an angle of $+\phi_v/2$ and $-\phi_v/2$, respectively, on the first reference plane XZ, and at an angle of $+\phi_H/2$ and $-\phi_H/2$, respectively, on the second reference plane YZ.

7. A device according to Claims 4 and 5, wherein the optical paths (100b) of the second illuminating assemblies (2b) are set, relative to the axis Z, at an angle of $+\phi_v/2$ and $-\phi_v/2$, respectively, on the first reference plane XZ, and at an angle of $+\phi_H/2$ and $-\phi_H/2$, respectively, on the second reference plane YZ.

8. A device according to anyone of Claim 6 or 7, comprising at least a substantially tubular element (20) having an inclined upper surface (21) for accommodating the light source (3) such that the optical path (100a,100b) of the illuminating assembly (2a,2b) is inclined at angles of $\pm\phi_v/2$ and $\pm\phi_H/2$ relative to the axis Z.

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9. A device according to Claim 1, further comprising at least one optical deflection prism ~~(9)~~ disposed on the optical emission path ~~(100a,100b)~~.

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10. A device according to anyone of Claim 6 or 7, wherein each optical emission path (100a,100b) of the first and second illuminating assemblies (2a,2b) comprises a first path length set, relative to the axis Z, at an angle of $+\phi_v/2$ and $-\phi_v/2$ ($+\phi_H/2$ and $-\phi_H/2$), respectively, on the first (second) reference plane XZ (YZ), and a second path length set, relative to the axis Z, at an angle of $+\phi_v/2$ and $-\phi_v/2$ ($+\phi_H/2$ and $-\phi_H/2$), respectively, on the first (second) reference plane XZ (YZ), and at an angle of $+\phi_H/2$ and $-\phi_H/2$ ($+\phi_v/2$ and $-\phi_v/2$), respectively, on the second (first) reference plane YZ (XZ).

11. A device according to Claims 9 and 10, wherein the optical deflection prism (9) is effective to deflect the

second path lengths through angles of $\pm\phi_H/2$ $(\pm\phi_V/2)$.

12. A device according to anyone of Claim 6 or 7, wherein each optical emission path (100a,100b) of the first and second illuminating assemblies (2a,2b) comprises a first path length substantially parallel to the aiming axis Z, and a second path length set, relative to the axis Z, at an angle of $+\phi_V/2$ and $-\phi_V/2$, respectively, on the first reference plane XZ, and at an angle of $+\phi_H/2$ and $-\phi_H/2$, respectively, on the second reference plane YZ.

13. A device according to Claim 12, comprising a pair of optical deflection prisms ~~(9)~~ arranged on each optical emission path ~~(100a,100b)~~ and effective to deflect the second path lengths through angles of $\pm\phi_H/2$ and $\pm\phi_V/2$.

14. A device according to Claim 12, comprising a single optical deflection prism arranged on each optical emission path ~~(100a,100b)~~ downstream of the converging lens (5) and effective to deflect the second path lengths through angles of $\pm\phi_H/2$ and $\pm\phi_V/2$.

15. A device according to Claim 13, wherein the optical prisms ~~(9)~~ of ~~each~~ pair of optical prisms ~~(9)~~ are of a integral construction and are placed downstream of the converging lens ~~(5)~~ on the optical emission path ~~(100a,100b)~~.

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16. A device according to Claims 13 or 14, wherein the optical prism(s) (9) of each pair of optical prisms (9) is(are) formed integrally with the optical prism(s) (9) of the pair of prisms (9) situated on the same side with respect to the second reference plane YZ.

17. A device according to Claims 15 and 16, wherein the pairs of optical prisms (9) situated on the opposite side with respect to the second reference plane YZ are mutually associated by a mounting plate.

18. A device according to Claim 1, further comprising a

tubular element (7a,7b) associated with a holding/supplying plate (6) for the light source (3) and adapted to isolate the light emitted by the source (3) and hold the diaphragm (4) and converging lens (5).

19. A device according to Claim 1, wherein the illuminating assembly (2a,2b) comprises a V-like light guide (12) disposed, on the emission path (100), between the light source (3) and the converging lens (5) and effective to generate a pair of optical paths (100) respectively set, relative to the axis Z, at an angle of $\pm\phi_H/2$ on a second reference plane YZ.

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20. A device according to Claim 1, further comprising a means for determining the distance of the reading zone from the device ~~(1)~~.

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21. A device according to Claim 1, further comprising a means for determining the orientation of the reading zone with respect to the device ~~(1)~~.

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22. A device according to Claims 20 and 21, wherein the means for determining said distance and orientation of the reading zone comprise:

- a lens for picking up the light diffused from the illuminated portion of the reading zone;
- means for sensing the image of the light diffused from the reading zone and picked up on the lens;
- means for processing the image acquired by the sensing means for calculating the distance and orientation of the reading zone according to the size of the diaphragm (4), the distance between the sensing means and the diaphragm (4), the distance between the lens and the converging lens (5), and the size of the image acquired by the sensing means.

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23. An optical apparatus for reading information, characterized in that it comprises a device ~~(1)~~ as claimed in Claim 1.

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24. A method for aiming and visually indicating a reading zone, characterized in that it comprises the steps of:
- generating, by means of a light source (3), at least one light beam for illuminating a portion of the reading zone along an emission path (100a,100b);
- selecting, by means of a shaped diaphragm (4), a portion of the light beam generated by the light source (3);
- collimating, by means of a converging lens (5), the portion of the shaped light beam coming from the diaphragm (4);
- projecting, onto the reading zone portion, the light beam picked up on the converging lens (5).

25. A method according to Claim 24, comprising the step of determining the distance of the reading zone.

26. A method according to Claim 24, comprising the step of determining the orientation of the reading zone.

27. A method according to Claim~~s~~ 25 ~~and 26~~, wherein the steps of determining the reading zone distance and orientation comprise the following steps:
- picking up, on a receiving lens, the light beam diffused from the illuminated portion of the reading zone;
- acquiring on a sensing means, the image of the light diffused from the reading zone and picked up on the receiving lens;
- processing the acquired image to calculate the distance and orientation of the reading zone according to the size of the diaphragm ~~(4)~~, the distance between the sensing means and the diaphragm ~~(4)~~, the distance between the lens and the converging lens ~~(5)~~, and the size of the image picked up on the sensing means.

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